

WHAT IS CLAIMED IS:

1. A method for producing a composite digital image, comprising the steps of:
 - a) providing a plurality of partially overlapping source digital images having pixel values that are linearly or logarithmically related to scene intensity;
 - b) modifying the source digital images by applying to one or more of the source digital images a radial exposure transform to compensate for exposure fall off as a function of the distance of a pixel from the center of the digital image to produce adjusted source digital images; and
 - c) combining the adjusted source digital images to form a composite digital image.
2. The method of claim 1, further comprising the step of applying a linear exposure transform to one or more of the source digital images prior to combining the adjusted source digital images to produce adjusted source digital images having pixel values that closely match in an overlapping region.
3. The method claimed in claim 1, wherein the radial exposure transform includes a \cos^4 dependence on the distance from the center of the image.
4. The method claimed in claim 1, wherein the step of providing source digital images further comprises the step of applying a metric transform to a source digital image such that the pixel values of the transformed source digital image are linearly or logarithmically related to scene intensity.
5. The method claimed in claim 4, wherein the metric transform is a scene independent transform.

6. The method of claim 1, wherein the combining step includes calculating a weighted average of the pixel values in the overlapping region.

7. The method of claim 1, further comprising the step of transforming the pixel values of the composite digital image to an output device compatible color space.

8. The method of claim 4, wherein the metric transform includes a color transformation matrix.

9. The method of claim 4, wherein the metric transform includes a lookup table.

10. The method of claim 4, wherein the metric transform is included as metadata with the corresponding source digital image.

11. The method of claim 2, wherein the linear exposure transform is a function of the shutter speed used to capture the source digital image, and the shutter speed is included as meta-data with the corresponding source digital image.

12. The method of claim 2, wherein the linear exposure transform is a function of the f-number used to capture the source digital image and the f-number is included as meta-data with the corresponding source digital image.

13. The method of claim 1, wherein the radial transform is included as metadata with the corresponding source digital image.

14. The method claimed in claim 1, wherein the focal length of the lens used to capture each source digital image is employed to calculate the radial transform.

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15. The method claimed in claim 1, wherein a use of flash indicator is employed to calculate the radial transform for each digital image.

16. A system for producing a composite digital image, comprising:

- a) providing a plurality of partially overlapping source digital images having pixel values that are linearly or logarithmically related to scene intensity;
- b) modifying the source digital images by applying to one or more of the source digital images a radial exposure transform to compensate for exposure fall off as a function of the distance of a pixel from the center of the digital image to produce adjusted source digital images; and
- c) combining the adjusted source digital images to form a composite digital image.

17. A computer program product for performing the method of claim 1.

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